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IN THE CLAIMS

Please amend the claims as follows:

1. **(Currently Amended)** In a network, a method for segmenting a streaming multimedia clip ~~into a plurality of sequentially organized data segments of exponentially increasing size~~ and distributing said streaming multimedia clip from an origin server to a plurality of streaming caches which comprise a distribution set in said network, the method comprising the steps of:
 - determining a size (L) of the multimedia clip;
 - segmenting the streaming multimedia clip into ~~a plurality of data segments of exponentially increasing size~~ a first plurality of data segments of first predetermined segment size and a second plurality of data segments of exponentially increasing size; and
 - distributing the ~~plurality~~ first and second pluralities of data segments from the origin server to said plurality of streaming caches, wherein an i-th data segment is distributed in an i-th distribution round to each of said plurality of streaming caches.
2. **(Currently Amended)** The method according to Claim claim 1, wherein the size of ~~an i-th~~ a k-th data segment in the second plurality of data segments is computed as $L/2^{(N+1-i)} L/2^{(K-k+1)}$
 - where $[[N]]$ K is the a total number of data segments in the second plurality of data segments, and
 - where $[[i]]$ k is an index defining each of the $[[N]]$ K data segments, ($i=1,2,\dots,N$) ($k=1,2,\dots,K$), in the second plurality of data segments.
3. **(Currently Amended)** The method according to Claim claim 1, wherein the size L of the multimedia clip is measured in units of time.
4. **(Currently Amended)** The method according to Claim claim 1, wherein the segmenting step further comprises the steps of:

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determining in an m-th distribution round if a data segment of said multimedia clip is equal to or greater than a predetermined threshold value, said m-th data segment referred to as a threshold data segment; and

dividing a remaining undivided portion of said multimedia clip into a third plurality of data segments having a second predetermined segment size if the data segment of said multimedia clip is equal to or greater than a the predetermined threshold value.

5. **(Currently Amended)** The method according to Claim claim 4, wherein said remaining undivided portion is divided into data segments in successive rounds having an index m+1 through N, where N is a total number of data segments of the first plurality of data segments and the second plurality of data segments.

6. **(Currently Amended)** The method according to claim 4, wherein the second predetermined segment size is equal to the size of the threshold data segment.

7. **(Currently Amended)** The method according to claim 4, wherein the second predetermined segment size is computed as:

$$2^{(r-1)} * \delta$$

where $\delta = L / 2^{(N-1)}$ the size of a first segment δ is computed as $L / 2^{(N-1)}$, and

where r is a user adjustable parameter used to determine the second predetermined segment size for those fixed segments which occur once the predetermined threshold has been reached.

8. **(Currently Amended)** The method according to Claim claim [[5]] 7, wherein δ is on the order of 5 to 30 seconds.

9. **(Currently Amended)** The method according to Claim claim [[4]] 7, wherein the values for δ , r and m are determined by an origin server in accordance with an origin server aware scheme.

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10. **(Currently Amended)** The method according to claim ~~[[4]]~~ 7, wherein the values for δ , r and m are determined by inter-cache communications in an origin server transparent scheme.

11. **(Currently Amended)** The method of ~~Claim claim~~ 1, wherein the distributing step further comprises the step of:

at each of the plurality of streaming caches, storing an i -th data segment of the first plurality of data segments in an i -th distribution round with a probability equal to a first predetermined probability, where $(i = 1, \dots, k-1)$; and

at each of said plurality of streaming caches, storing an i -th data segment of said streaming multimedia clip ~~the second plurality of data segments~~ with probability equal to $1/2^{(i-1)}$ in an i -th distribution round, where $i = 1, 2, \dots, N$ ($i = k, \dots, N$).

12. **(Cancelled)**

13. **(Currently Amended)** A method of distributing a segmented streaming multimedia clip among a plurality of streaming caches, comprising the steps of:

at each of said streaming caches:

receiving a plurality of data segments of the segmented streaming media clip, wherein the plurality of data segments comprises a first plurality of data segments having a first predetermined segment size and a second plurality of data segments of exponentially increasing size, wherein an i -th data segment is received in an i -th distribution round;

storing the i -th data segment of the segmented streaming multimedia clip in the i -th distribution round with a fixed probability, where the i -th data segment is associated with the first plurality of data segments; and

storing an i -th data segment of the segmented streaming multimedia clip in the i -th distribution round with a probability equal to $1/2^{(i-1)}$ where the i -th data segment is associated with the second plurality of data segments.

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14. **(Currently Amended)** The method according to ~~Claim~~ claim 13, further comprising the step of:

storing an the ~~i-th~~ data segment of said segmented streaming multimedia clip with probability equal to $[1/2^{(i-1)}] * e(x)$, where the i-th data segment is associated with the second plurality of data segments, where $e(x)$ is a constant that is proportional to a popularity rating of the clip, where $0 \leq e(x) \leq 1$.

15. **(Withdrawn)** A method of replacing segments in an SC, the method comprising:

- (a) computing a potential function for each stored segment in said SC;
- (b) sorting said stored segments into one of a plurality of bands wherein said bands are organized from a highest order band to a lowest order band, said bands being defined by an upper and a lower band boundary having values corresponding to the potential function; and
- (c) replacing segments as needed in a sequence starting from those segments stored in said lowest order band to said highest ordered band, wherein segments are replaced in each band starting with segments having a corresponding lowest potential function value.

16. **(Withdrawn)** The method of Claim 14, wherein said potential function is computed for a segment j of clip i as:

$$F(i,j) = \text{Prob (selecting a clip with rank } i) * \text{Prob (selecting segment } j \text{ of the clip)}$$

where rank is determined using a global clip hotness rating.

17. **(Withdrawn)** The method of Claim 15, wherein said potential function is quantized prior to said sorting step.

18. **(Withdrawn)** A method of replacing segments in an SC, the method comprising:

- (a) Identifying a multimedia clip in said SC having a lowest

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global clip hotness rating;

(b) in the case where it is determined that said identified multimedia clip's global hotness rating is lower than a first threshold;

(1) removing said identified multimedia clip from said SC; and

(2) repeating steps (a)-(b) until either a sufficient amount of disk space is freed to terminate said method or step (b) is not satisfied;

(c) if step (b) is not satisfied, removing a number of segments of said identified multimedia clip from said SC starting from a last segment until either a sufficient amount of disk space is freed to terminate said method or a predefined threshold percentage of said identified multimedia clip remains; and

(d) if the predefined threshold percentage of the clip remains, identifying a multimedia clip in said SC having the next lowest global clip hotness rating, and repeating step (c).

19. **(Currently Amended)** A system for segmenting, distributing and replacing segments of streaming multimedia clips in a network, comprising:

at least one origin server storing said streaming multimedia clips;

a plurality of streaming caches in communication with said at least one origin server, said plurality of streaming caches defining a distribution set;

first processing means associated with said at least one origin server for segmenting the streaming multimedia clip into ~~a plurality of data segments of exponentially increasing size~~ a first plurality of data segments having a first predetermined segment size and a second plurality of data segments of exponentially increasing size, and for distributing said plurality first and second pluralities of data segments to each of said plurality of streaming caches; and

second processing means associated with each of said plurality of streaming caches for storing data segments received from said at least one origin server in a SC and for replacing said stored data segments from said SC.

20. **(Currently Amended)** The system of Claim claim 19, wherein said second processing means further comprises:

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means for computing a potential function for each stored data segment for replacing segments.

21. (Currently Amended) The system of ~~Claim~~ claim 19, wherein said second processing means further comprises:

means for computing a probability to determine whether to store or discard each data segment received from said at least one origin server.